NATURAL RESOURCES

Introduction

This chapter provides an inventory of the natural resources in Lumpkin County, assesses the natural environmental limitations posed on future development, and establishes a set of goals and objectives designed to protect and preserve the natural resources of the County.

Weather and Climate

The climate of Lumpkin County is strongly influenced by the rugged mountainous terrain. Summers are mild and winters are cold. Generous precipitation occurs throughout the year with heavier amounts in winter and early spring.

Summer temperatures are usually pleasant. Afternoon highs are normally in the mid 80's to near 90°F., or higher, on less than one-third of the days. Readings as high as 100°F., are very rare. The highest temperature of record is 103°F. in July, 1952. The temperature drops sharply after sunset, reaching the mid to low 60's by early morning. The average summer minimum is 63.6°F.

Winters are moderately cold but not severe. Early morning temperatures are below freezing on about 3 out of 5 days from December through February and on almost one-third of the days in November and March. Two years out of 3 have one or more days with a minimum under 10°F. and an occasional strong cold wave will bring readings of zero, or below, for short periods. The lowest temperature of record is -11°F. in February, 1899. The lowest in recent years is -6°F in January, 1966.

The mountainous terrain results in large differences in minimum temperatures over the area. On clear still nights, radiationally cooled air drains down the slopes and into the valleys to produce cold air pockets. Under extreme conditions, early morning temperatures may be 10°F. to 15°F. lower in the valleys than on nearby slopes. The orientation of a slope or hill may also influence its temperature regime. A south-facing slope receives more radiation than one facing north and may have a significantly warmer microclimate. Knowledge of the terrain and its influence on local temperature can be important in temperature sensitive operations.

Except during the coldest weather, winter days normally warm to the 50's with some readings in

the 60's each year. The average maximum for the three winter months is 51.8°F.

The weather is quite variable in spring with several rainy periods likely, especially in March and early April. Sunny weather with mild days and cool nights are typical of fall. The average dates of the last spring and first fall freezing temperatures are April 8 and November 1, respectively, giving an average freeze-free growing season of 207 days. The last spring freeze has occurred as early as March 13, and as late as May 2. The date of the first fall freeze has ranged from September 30 to December 2.

Annual precipitation averages 62 inches but has varied from 86.12 inches in 1929 to only 39.22 inches in 1904. Winter and spring are the rainiest seasons with a secondary maximum in mid-summer of more than 5 inches. Autumn is normally the driest part of the year but even October, the driest month, averages almost 3.5 inches. Calendar month extremes for precipitation are 20.62 inches in December 1932 and zero in October 1963. Only a trace fell at the station in October 1904. Snowfall contributes to winter precipitation during more than half the years. One of the snowiest winters of record was 1935-36 when 21 inches fell from December through February. A late winter storm dropped almost 15 inches of snow on the area in March 1942. Recent weather events, such as the 8-year long drought that only recently began to subside as rainfall returned during the fall and spring of 2003.

Prevailing wind directions usually parallel the ridges which run mainly northeast-southwest. Wind speeds generally average lower in the forested mountain area than farther south.

Physiography

The highest elevation in Lumpkin County is found at Blood Mountain, which is 4,400 feet high. The lowest elevation is found where the Etowah River leaves the county in the southeast corner.

Lumpkin County lies within two physiographic provinces: the Blue Ridge Province, Southern Blue Ridge Section; and the Piedmont Province, Southern Piedmont Section, Upland Georgia Sub-section. The northern section of the County lies within the Blue Ridge Mountains District, which is characterized by a mass of rugged mountains, and ridges ranging in elevation from 3500-4700 feet in the north and east of the district to 3000-3500 feet in the southwest of the district. The southern boundary of the Blue Ridge abuts the Piedmont Province at approximately the 1700-foot elevation where a sharp change in regional slope occurs.

Approximately three-quarters of Lumpkin County lies in three districts of the Piedmont Province. The majority of the county is found in the Dahlonega Upland District. This district is characterized as being rough and hilly in the northeastern portion with stands from 1500-1700 feet above sea level. In the southern and southwestern portions, the surface elevation drops to 1200 feet. The southern and western boundaries are formed by the low, linear, parallel ridges of the Hightower-Jasper Ridges District.

The Hightower-Jasper Ridges District is found in the lower quarter of Lumpkin County. The district consists of a series of low, linear, parallel rides separated by narrow valleys. The Hightower Ridges range in elevation from 1500 feet in the northeast to 1000 feet in the southwest. Relief in this area varies from 500 feet in the northeast to 200 feet in the southwest.

The remaining southeastern portion of the county lies within the Central Uplands District. This district is characterized as having a series of low, linear ridges, 1300-1500 feet above sea level, and separated by broad, open valleys. Streams flowing through this section occupy valleys 150-200 feet below the ridge crests.

Soil Types

An analysis of the types of soils in Lumpkin County and their suitability for certain land uses is an important component of the Comprehensive Plan. Lumpkin County has a broad range of silts, which are listed by symbol and name in the following table, along with the limitations of each soil type on dwelling foundations, septic tank utilization, and commercial structures.

Table 6-1. Soil Types in Lumpkin County as Identified in the USDA Soil Conservation Service Soil Survey of 1972.

Symbol	Soil Name (% Slope)	Foundations for Dwellings	Septic Tank Utilization	Commercial Structures	Acres	% of Total County Acreage
AmC2*	Appling sandy loam (6-10)	Sl	M	M	5	.003
AcG	Ashe stony loam (60-90)	Se	Se	Se	4,250	2.3
AEE	Ashe/Edneyville stony loam (10-25)	Se	Se	Se	1,670	.9
AEF	Ashe/Edneyville stony loam (25-60)	Se	Se	Se	6,400	3.4
AWB**	Augusta fine sandy loam (2-6)	Se	Se	Se	415	.22
AwC	Augusta fine sandy loam (6-10)	Se	Se	Se	255	.14
Bfs	Buncombe loamy sand (0-6)	Se	Se	Se	530	.28
BvF	Burton loam (15-50)	Se	Se	Se	90	.05
Cac**	Cartecay complex (0-2)	Se	Se	Se	2,875	1.5
CCF	Chandler loam (25-60)	Se	Se	Se	1,215	.65
Con*	Conagree/Starr soils (0-2)	Se	Se	Se	1,555	.83
EPD	Edneyville/Porters loam (10-15)	M	M	Se	1,345	.727
EPE	Edneyville/Porters loam (15-25)	Se	Se	Se	2,480	1.3
EPF	Edneyville/Porters loam (25-60)	Se	Se	Se	5,475	2.9
EPG	Edneyville/Porters loam (60-80)	Se	Se	Se	1,520	.82
FaB*	Fannin fine sandy loam (2-6)	Sl	M	M	290	.16
FaC*	Fannin fine sandy loam (6-10)	Sl	M	M	4,675	2.5
FaE	Fannin fine sandy loam (10-25)	M to Se	Se	Se	10,950	5.9

Symbol	Soil Name (% Slope)	Foundations for Dwellings	Septic Tank Utilization	Commercial Structures	Acres	% of Total County Acreage
FbC2	Fannin sandy clay loam (6-10)	Sl	M	M	1,495	.80
FbE2	Fannin sandy clay loam (10-25)	Se	Se	Se	2,515	1.4
FcF	Fannin soils (25-60)	Se	Se	Se	55	.03
Gul	Gullied land		Not Rated		805	.43
HIB*	Hayesville sandy loam (2-6)	Sl	M	M	345	.19
HIC*	Hayesville sandy loam (6-10)	Sl	M	M	3,500	1.9
HIE	Hayesville sandy loam	M to Se	Se	Se	21,240	11.4
HJC3*	Hayesville sandy clay loam (6-10)	Sl	M	M	1,185	.64
HJE3*	Hayesville sandy clay loam (10-25)	Se	Se	Se	3,630	1.9
HKC3	Hayesville/Rabun clay loam (6-10)	Sl	M	M	2,390	1.3
HLC*	Hayesville/Rabun loams (6-10)	Sl	M	M	1,705	.92
HLD	Hayesville/Rabun loams (10-15)	M	Se	Se	4,525	2.4
HLF	Hayesville/Rabun loams (25-60)	Se	Se	Se	480	.26
HSC*	Hiwassee loam (2-10)	Sl	Sl to M	M	1,865	1.0
HSD*	Hiwassee loam (10-15)	M	M	M	2,150	1.2
HSF	Hiwassee loam (15-40)	Se	Se	Se	2,075	1.1
MCE	Musella cobbly loam	Se	Se	Se	6,260	3.4
MCG	Musella cobbly loam (25-70)	Se	Se	Se	9,725	5.2
MoB*	Masada fine sandy loam (2-6)	Sl	Sl	M	865	.46

Symbol	Soil Name (% Slope)	Foundations for Dwellings	Septic Tank Utilization	Commercial Structures	Acres	% of Total County Acreage
MoB2*	Masada fine sandy loam, eroded (2-6)	Sl	Sl	M	470	.25
MoC2*	Masada fine sandy loam, eroded (6-10)	Sl	Sl	M	1,105	.59
MoD2*	Masada fine sandy loam, eroded (10-15)	M	M	Se	320	.17
MuE2	Musella gravelly clay loam (10-25)	M to Se	Se	Se	3,540	1.9
RaE	Rabun loam (15-25)	M	Se	Se	5,550	3.0
RbD3	Rabun loam (15-25)	M	M	Se	2,900	1.6
RbE3	Rabun clay loam (15-25)	Se	Se	Se	3,700	2.0
Roc	Rockland (15-90)	Not Rated	Not Rated	Not Rated	990	.53
Sta*	Starr fine sandy loam (0-4)	Se	Se	Se	640	.34
TbE	Tallapoosa cobbly fine sandy loam (6-25)	Se	Se	Se	2,290	1.2
TcE	Tallapoosa fine sandy loam (10-25)	M to Se	Se	Se	240	.13
TdG	Tallapoosa soils (25-70)	Se	Se	Se	27,000	14.5
TlC*	Tusquitee loam (6-10)	Sl	Sl	M	1,730	.93
TlD	Tusquitee loam (10-25)	M to Se	M to Se	Se	3,695	2.0
TlF	Tusquitee loam (25-60)	Se	Se	Se	2,290	1.2
TmE	Tusquitee stony loam (10-25)	Se	Se	Se	2,125	1.1
TmF	Tusquitee stony loam (25-60)	Se	Se	Se	2,395	1.3
Toc*(**)	Toccoa soils (0-2)	Se	Se	Se	3,135	1.7

Symbol	Soil Name (% Slope)	Foundations for Dwellings	Septic Tank Utilization	Commercial Structures	Acres	% of Total County Acreage
Wed**	Wehadkee soils (0-2)	Se	Se	Se	245	.13
WgC*	Wickham fine sandy loam (6-10)	Sl	Sl	M	940	.5
WgD	Wickham fine sandy loam (10-25)	M to Se	M to Se	Se	6,590	3.5
WgF	Wickham fine sandy loam (25-50)	Se	Se	Se	1,470	.79
WnD3	Wickham sandy clay loam (10-15)	M	M	Se	35	.02
WgF	Wickham fine sandy loam (25-50)	Se	Se	Se	1,470	.79
WnD3	Wickham sandy clay loam (10-15)	M	M	Se	35	.02
			TOTAL		186,240	100%

Notes:
* Suitable for farming (cultivated crops).
** Hydric soils, according to Soil Conservation Service.
Se Severe limitations, extensive adjustments are needed before the soil is suitable for the specified purpose.
M Moderate limitations, some adjustment needed for use.
Sl Slight limitations, little or no adjustments needed for use.

Table 6-2. Limitations of Soils in Development

Lumpkin County	Acres	Percentage of Total County Acreage
Total Hydric Soils	6,670	3.6%
Total Prime Agricultural Soils[1]	20,515	11%
Total Soils with 25% slope or more	65,340	35.1%
Total Soils Suitable for Septic Tanks[2]	28,415	15.3%
Total Soils Suitable for Commercial Structures[2]	24,755	13.3%

Notes:
1. Excludes the Cartecay Complex and Toccoa soil types, which is considered a hydric soil and therefore not included as a prime agricultural soil.
2. With only slight or moderate limitations. Can be used with special management.

Source: U.S. Department of Agriculture, Soil Conservation Service. Soil Survey of Dawson, Lumpkin and White Counties, Georgia. 1972.

Soil Suitability for Prime Agricultural Lands, Row Crops and Forestry

Of the 59 soil types indicated in the Soil Survey, 18 soil types have been identified with an asterisk (*) as suitable for intensive crop cultivation. The soils most suitable for crop cultivation are found on the less steep slopes (2-10%). Most of the soils in Lumpkin County have limitations for intensive crop cultivation due to the steep slopes, severe erosion hazards, flooding, low natural fertility, low organic matter content, shallow depth of rooting zone, rock outcrops and/or surface stones. Although only 18 soil types are found suitable for intensive crop cultivation, other soil types can be and have been cultivated for crops. Furthermore, many of the soils identified as not being suitable for intensive crop cultivation are suitable for other agricultural uses such as pasture and woodlands (forestry).

Soil Suitability for Dwelling Foundations, Septic Tank Absorption Fields and Commercial Structures

The vast majority of land areas in Lumpkin County have soils that pose severe limitations to dwelling foundations and septic tank utilization. The Hayesville (HlB, HlC, HJC3, HKC3, HLC) and Masada (MoB, MoB2, MoC2) soil associations have slopes ranging from 2-10% and are most suitable for these uses. Approximately 39,430 acres, or 21.2% of the total County land area, have slight to moderate limitations on dwelling foundations and septic tank utilization. Even less of the County has soils suitable for commercial structures without extensive adjustments. Approximately 24,755 acres or 13.3% of the County has land displaying moderate characteristics of suitability for commercial structures.

Septic Tanks and On-Site Sewage Structures

Prior to the installation of new on-site sewage structures like septic tanks, a land owner/developer must obtain an On-Site Sewage Management Systems Construction Permit (O.C.G.A. 12-8-1, 31-2-2, 31-2-4, 31-2-7). In order to obtain the permit, the County Board of Health shall approve such construction and/or installation. In order for the Board to approve such a permit, a certified soil scientist must provide on-site characteristics (including soil types and capabilities). Currently, these regulations if enforced adequately protect soil and water resources in Lumpkin County.

Soil Erosion

The county is aware of the 2003 amendments to the Georgia Erosion and Sedimentation Act of 1974 (O.C.G.A. 12-7-1) dealing with construction and development site soil erosion and sedimentation. In order for any local government to become or remain a certified local issuing authority for an erosion and sedimentation control permit (also known as a grading permit), the local government must first adopt an ordinance which demonstrates compliance with the new provisions in O.C.G.A. 12-7-1 by July 2004. Lumpkin County has adopted a revised ordinance, which reflects the new provisions.

Prime Agricultural and Forested Lands

"Prime farmland" in Georgia is land which is best suited for producing food, feed, forage, fiber, and oilseed crops, and also available for these uses. It has the soil quality, growing season, and moisture supply necessary to produce sustained good yields of crops economically if treated and managed, including water management according to modern farm methods.

From the list of soils found in Table 6-1, 18 soils types have been identified as prime agricultural soils. There are scattered fragments of prime agricultural soils throughout the county, with one main cluster located in the southwest section of the county, west of SR 9.

In the *2002 Census of Agriculture* compiled by the USDA National Agricultural Statistics Service, and distributed in June 2004, the number of individual farms in Lumpkin County increased from 1997 to 2002 (236 farms to 250 farms). However, the number of acres in farms decreased from 26,327 acres to 21,303 acres, the number of total cropland acres decreased from 9,523 acres to 6,181 acres and the number of total woodland acres decreased from 11,521 acres to 8,782 acres. This trend of decline seems to follow the trend of increase of market value for farmland and woodland acreage, which increased from $3,097 per acre in 1997 to $6,096 per acre in 2002. Obviously local farm owners might want to sell their farms to gain a profit, so efforts may be needed to retain local agricultural and forested lands.

The State of Georgia is currently in the process of creating the Georgia Land Conservation Partnership whose purpose will be to oversee the development of the state's first comprehensive, statewide land conservation plan. Along with efforts by the USDA and local land trusts, this Partnership may provide protection for prime agricultural and forested lands in Lumpkin County.

Mineral Resources

Lumpkin County contains a variety of mineral resources. Two main areas of the county contain granite and related outcrops: one area is a stretch of land in the southeast section of the county; and the other area is found in the northeast corner of the county. A small section of granite and related outcrops is found in the northern portion of the county, east and west of SR 60, along the county's boundary.

A major stretch of gold deposits bisecting the City of Dahlonega, runs to the northeast and southwest of the City. There are also three clusters of Mica (colored or transparent mineral silicates that separate into thin leaves and used dry in roofing materials, joint cement, well drilling compounds and paint) located west of

SR 60 along the county's border, with another cluster of mica in northwest Lumpkin County and a third cluster of mica located west of Dahlonega, on the north and south sides of SR 52. Other mineral resources found in less quantity include: corundum (a very hard mineral that consists of aluminum oxide and which is used as an abrasive); iron and manganese, sillimanite (a mineral consisting of aluminum silicate which has uses in the production of high temperature refactories), soapstone (a soft stone having a soapy feel and composed of talc, chlorite and magnetite), pyrite, kyanite, and halloysite.

Sources: Georgia Department of Mines, Mining and Geology, *The Common Rocks and Minerals of Georgia Information Circular No. 5*, 1934, Revised 1984. Georgia Department of Natural Resources, Georgia Geologic Survey, M*ineral Resources Map*, 1969.

Gold mining in Lumpkin County has diminished from a large profitable industry to a small industry focused on recreation and tourism. There are two major sites in existence in Lumpkin County for recreational gold mining. In the Etowah River watershed, situated within the physiographic gold belt of Dahlonega, there are approximately 130 acres of land. The land has a history of gold mining that dates all the way back to the early 1800's, and it is located on about a one-mile stretch of the Etowah River and its tributaries. Gold mining practices can be damaging to water quality in the surrounding areas, but mining is exempt from current water quality control regulations. In the Yahoola Creek watershed, situated within one the richest areas of the gold belt of Dahlonega, there are many acres of land used for recreational gold mining and is near Crown Mountain. Similar to the Etowah, the Yahoola site is located on about a one-

mile stretch of the Yahoola Creek and its tributaries, and gold mining practices have been shown to damage water quality in the local vicinity. In the Tesnatee/Chesatee River watershed, actually situated across the county line in White County, there are many acres of land used for recreational gold mining. Sedimentation from sites like these cause a visible difference in the turbidity between the upper Chestatee River and the Tesnatee Creek at their confluence inside Lumpkin County.

The following table describes present mining companies within Lumpkin County, the mine location and the products that were mined in 2003.

Table 6-3. Mineral Industries Operating in Lumpkin in 2003.

Company	Location of Mine, Pit, or Quarry	Product(s)
Cherokee Sand and Material Rt. 2 Box 2878 Dawsonville, GA 30534 (404) 216-3013	Dredge: On the Chestatee River at Lake Lanier (Permit #988-90)	Sand-construction: Aggregate. Quaternary - alluvium
Vulcan Materials Co., SE Division P.O. Box 80730 Atlanta, GA 30366 (770) 458-4481 Quarry: (706) 864-3079	Dahlonega Quarry: 779 Buffington Rd, 4 miles east of Dahlonega on GA Hwy. 52 (Permit #361-98, formerly operated by Colwell Construction Co.).	Stone-crushed granite: Aggregate. (Paleozoic - granite gneiss)
Long Branch Quarry, LLC 6160 Peachtree-Dunwoody Rd. NE, Suite B-220 Atlanta, GA 30328 (770) 393-0430 Quarry: (706) 867-6000	Quarry: 983 Red Oak Flats Rd., 6 miles SE of Dahlonega, 1 mile NE of GA Hwy. 400, 1 mile N of GA Hwy. 60 (Permit #1104-95)	Stone-crushed granite: Aggregate. (Precambrian/Paleo zoic - biotite gneiss)

Source: Georgia Department of Natural Resources, Environmental Protection Division, Georgia Geologic Survey. 2003. *Mining Directory of Georgia.* (Circular 2).

Steep Slopes

Due to its location in both the Blue Ridge and Piedmont Physiographic Provinces, Lumpkin County has a number of steep sloped mountain ridges, which comprise the magnificent views of the region and pose limitations on development. About 32% of the county is in Chattahoochee National Forest ownership, and therefore about a third of the county's steep slopes receive protection from development. However, the remainder of the steep sloped mountain ridges and other prominent ridges in private ownership are susceptible to development and construction activity. Currently Lumpkin County's Subdivision Regulations are enforced and are designed to limit adverse impacts of development on steep slopes.

Steep slopes in Lumpkin County are illustrated in the following map using a digital elevation model (DEM) computer program. Much of the county is covered with steep slopes of more than 30% incline. As development continues in the county, general road construction and even minor subdivision road construction in these steep sloped areas need to follow if at all possible the original hydrological layout of the land to avoid damaging development and construction. Concerted efforts between public and private sectors will be needed in order to reach a practical balance between development activity and preservation of these unique and environmentally sensitive steep slopes.

Insert Steep Slopes Map

Plant and Animal Habitats

Georgia's Protected Species Program began in 1973 with the enactment of two state laws: the Endangered Wildlife Act and the Wildflower Preservation Act. These laws provide protection for certain species of plants and animals. Under the Natural Heritage Inventory Program, the Georgia Department of Natural Resources is continuously in the process of completing an inventory of rare plants, animals and natural habitats in Georgia warranting state and federal protection.

According to a report by the Georgia Department of Natural Resources, the natural environmental communities of Lumpkin County that are of special concern are shown in the Table 6-4; animals of special concern are shown in Table 6-5; and plants of special concern are shown in Table 6-6.

Table 6-4. Special Concern Natural Communities in Lumpkin County as of 2004.

Protection Status	Scientific Name	Common Name
Special concern only	*BARE ROCK/LICHENS, BR NONCALCAREOUS OUTCROP*	Noncalcareous (without calcium carbonate, calcium, or limestone) Outcrop Rock/lichens
Special concern only	*BR SHRUB BALD*	Shrub Bald, Heath Bald (tract of land overgrown with shrubs or coarse herbage)
Special concern only	*HERBACEOUS VEG., BR NONCALCAREOUS OUTCROP*	Noncalcareous Outcrop Herb Community
Special concern only	*SHRUB/SCRUB VEG., BR NONCALCAREOUS OUTCROP*	Noncalcareous Outcrop Shrub/scrub Community

Source: Georgia Department of Natural Resources, Wildlife Resources Division, Georgia Natural Heritage Program. 2004.

Table 6-5. Protected Plant Species in Lumpkin County as of 2004.

Protection Status	Scientific Name	Common Name
Special concern only	*Aster phlogifolius*	Phlox-leaved Aster
Special concern only	*Calycanthus brockiana*	Brock Sweetshrub
Special concern only	*Calystegia catesbeiana ssp. sericata*	Silky Bindweed
Special concern only	*Carex appalachica*	Appalachian Sedge
GA	*Carex manhartii*	Manhart's Sedge
Special concern only	*Carex scabrata*	Sedge
Special concern only	*Corydalis sempervirens*	Pale Corydalis
GA	*Cypripedium acaule*	Pink Ladyslipper
GA	*Cypripedium parviflorum var. pubescens*	Large-flowered Yellow Ladyslipper
Special concern only	*Herpetineuron toccoae*	A Moss
Special concern only	*Hypericum buckleii*	Blue Ridge St. Johnswort
Special concern only	*Juncus gymnocarpus*	Naked-fruit Rush
Special concern only	*Paronychia argyrocoma*	Silverling
Special concern only	*Penstemon smallii*	Small's Beardtongue
Special concern only	*Rhus typhina*	Staghorn Sumac
Special concern only	*Silene ovata*	Mountain Catchfly
Special concern only	*Trillium simile*	Sweet White Trillium
GA	*Xerophyllum asphodeloides*	Eastern Turkeybeard

Source: Georgia Department of Natural Resources, Wildlife Resources Division, Georgia Natural Heritage Program. 2004.

Table 6-6. Protected Animal Species in Lumpkin County as of 2004.

Protection Status	Scientific Name	Common Name
GA	*Cyprinella callitaenia*	Bluestripe Shiner
GA	*Etheostoma brevirostrum*	Holiday Darter
US	*Etheostoma etowahae*	Etowah Darter
Special concern only	*Etheostoma rupestre*	Rock Darter
US	*Etheostoma scotti*	Cherokee Darter
Special concern only	*Eumeces anthracinus*	Coal Skink
Special concern only	*Ichthyomyzon gagei*	Southern Brook Lamprey
Special concern only	*Micropterus cataractae*	Shoal Bass
Special concern only	*Neotoma floridana haematoreia*	Southern Appalachian Woodrat
Special concern only	*Notropis chrosomus*	Rainbow Shiner
GA	*Notropis hypsilepis*	Highscale Shiner
Special concern only	*Notropis stilbius*	Silverstripe Shiner
Special concern only	*Percina palmaris*	Bronze Darter
GA	*Percina sp. cf. macrocephela*	Muscadine Darter
Special concern only	*Phenacobius catostomus*	Riffle Minnow
Special concern only	*Scartomyzon lachneri*	Greater Jumprock
Special concern only	*Sorex hoyi*	Pygmy Shrew

Source: Georgia Department of Natural Resources, Wildlife Resources Division, Georgia Natural Heritage Program. 2004.

The following paragraphs describe other animals that were acknowledged in the previous Lumpkin County Comprehensive Plan. A summary is provided for each species along with its status.

The *Felis cougar*, commonly known as the Eastern cougar, panther and mountain lion, is a large spotted cat with a small, rounded head and long tail. The Eastern cougar is generally considered extinct while the habitat of the Western cougar has increased and may account for sparse Eastern cougar sightings in northern Georgia. Although the environment may be suitable for cougar habitat, no sightings have been reported in Lumpkin County. However, sightings have been reported in Towns County and within the Warwoman Management Area in Rabun County since 1977.

The *Myotis sodalis*, commonly known as the Indiana Bat, is a nocturnal insectivore with fine and fluffy, dark gray fur. It is sometimes mistaken for the Little Brown Bat (*Myotis lucifugus*). Its preferred habitat is caves with moderately cool temperatures and high humidity. The Indiana bat can occur in the northwestern third of Georgia and possibly parts of South Carolina. There is a single sighting record in Georgia, from a cave in Dade County. No sightings have been reported in Lumpkin County or in the Georgia Mountains Regional Development Center area.

The Red-Cockaded Woodpecker (*Picoides borealis*) is an endangered species that feeds in the upper regions of large pine trees and nests in over mature pines. Although the species can occur statewide, no sightings have been made in Lumpkin County or in the Georgia Mountains Region. Although no sightings have been made of the woodpecker, the Chattahoochee National Forest management plan will provide habitat protection in the form of reducing habitat fragmentation in the forest.

The Southern Bald Eagle *(Haliaeetus leucocephalus),* an endangered species, is a bird of inland waterways and estuarine systems. It requires wetland areas for hunting and has declined in population due to habitat destruction. No sightings have been made in Lumpkin County, but a few sightings have been made in the Georgia Mountains Region.

Fish are also an important part of wildlife in the mountains. The cold-water streams support rainbow, brown and brook trout, of which only the brook trout is a native species to the State of Georgia. Warm water species of fish, often found in lakes and larger, warmer streams, include largemouth and smallmouth bass, white bass, channel catfish, bluegill, and walleye.

In the Etowah River watershed section of the County, several special darters and shiners, and their habitat, have been reported, observed and researched to a degree that warrants further discussion.

Etowah Habitat Conservation Plan

As shown in Table 6-6, two fish species in parts of Lumpkin County are currently listed as threatened and/or endangered under the U.S. Endangered Species Act (ESA). They are the Etowah Darter (*Etheostoma etowahae*) and the Cherokee Darter (*Etheostoma scotti*). Under ESA regulation and enforcement, it is illegal to "take" threatened and/or endangered species, which means that it is illegal to kill, capture, or hurt them in anyway. Their habitat must remain healthy in order to protect them from being hurt in any way, directly or indirectly. As the county continues to grow and develop into a more suburban area, many residential and commercial development projects lead to more road construction and utility line installations, which currently does result in the "taking" of federally protected aquatic threatened and/or endangered species.

In an effort to balance the need for more services and housing with the need for more protection of currently listed aquatic threatened and/or endangered species and their habitats, an Etowah Regional Aquatic Habitat Conservation Plan is being developed for all communities within the upper Etowah River Watershed, including parts of Lumpkin County. The result will be a regional plan made up of similar development ordinance principles and stormwater control measures that if adopted and enforced will provide long-lasting protection for aquatic threatened and/or endangered species and their habitats.

Vegetation

The mountain region of North Georgia contains a multiplicity of climatic and soil conditions that stimulate the growth of many trees and plants. The slopes, soils, and annual rainfall are principal natural factors controlling the vegetation of the area. Table 6-7 provides a general overview of the major forest types based on ranges of elevation in Lumpkin County.

Table 6-7.
General Forest Types by Elevation.

Forest Type	Locale	Elevation
Oak Ridge	Along crests of Blue Ridge	3600-4000'
Open Oak Pine	Exposed north or south facing slopes	2100-3800'
Mixed Deciduous	Moist Valley Floors	1800-2000'
Oak-Hickory-Pine	Dry ridge slopes of Piedmont	1800-2000'

Source: Institute of Community and Area Development, University of Georgia, *The Atlas of Georgia.* 1986.

National Parks and Recreational Areas

Lumpkin County contains vast tracts of National Forest land in the upper three-quarters of the county, which offer a variety of outdoor activities. The following table provides a summary of the various national parks and recreational amenities Lumpkin County has to offer.

Table 6-8.
National Parks and Other Recreational Areas.

National Park and Recreational Area	Description/Location	Amenities
Chestatee Wildlife Management Area	Northeast corner of Lumpkin County	Hunting, Fishing, Camping, Hiking, Bird Watching, Picnicking, Horseback Riding
Desoto Falls National Forest	An area of rugged mountainous country, providing excellent views and many beautiful waterfalls. Two overlooks provide majestic views of the National Forest. Located approximately 16 mi. north of Dahlonega.	Fishing, hiking, camping
Dockery Lake	Located 11 1/2 mi. north on Georgia 60, then 3/4 mi. northeast on Forest Rd.	Fishing, hiking, camping, picnicking
Waters Creek	Located 12 1/4 mi. north on US 19, then 1 mi. northwest on Forest 34	Camping, trophy trout fishing
Woody Gap	Located approximately 13 mi. north of Dahlonega, west of route 60	Hiking, picnicking

Scenic Views and Sites

Lumpkin County is situated in the northeast Georgia Mountains of which a major portion of the

county is located in the Chattahoochee National Forest. This area offers many scenic views and sites. Designated scenic turnoffs along certain roads offer majestic views of the national forest. The U.S. Forest Service provides protection of many of the most significant "viewsheds." However, protection of some scenic views and sites located outside the Chattahoochee National Forest is needed. The future development and adoption of tree preservation ordinances, sign ordinances, and cell tower ordinances for these viewsheds is justified.

Groundwater Recharge Areas

Lumpkin County does not contain any noted groundwater recharge areas.

Wetlands

Wetlands are those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs and similar areas. The ecological parameters for designating wetlands include hydric soils, hydrophytic vegetation and hydrological conditions that involve a temporary or permanent source of water to cause soil saturation.

Fresh water wetlands and aquatic habitats are classified into the following categories:

Open water - Areas of open water, primarily reservoirs, ponds, lakes, rivers, and estuaries.

Non-Forested Emergent Wetlands - freshwater marshes dominated by a variety of grasses, sedges, rushes, and broad leaved aquatics associated with streams, ponded areas, and tidally-influenced non-saline waters.

Scrub/Shrub Wetlands - non-forested areas dominated by woody shrubs, seedlings, and saplings averaging less than 20 feet in height, these wetlands may intergrade with forested wetlands, non-forested emergent wetlands, and open water.

Forested Wetlands - natural or planted forested areas having a dominant tree crown closure or hardwoods, pines, gums, cypress, or any combination of these types. These areas are usually in stream or river floodplains, isolated depressions, and drainways, and contain standing or flowing water for a portion of the year.

Forested Wetlands Subcategories:

- Hardwood floodplain forests
- Coniferous floodplain forests
- Mixed floodplain forests
- Non-alluvial forested wetlands

Altered Wetlands - areas with hydric soils that have been denuded of natural vegetation and put to other uses, such as pastures, row crops, etc., but that otherwise retain certain wetland functions and values.

Table XX indicates important values that wetlands provide, while Table XX provides typical vegetation found in different types of wetlands.

Table 6-9.
Major Wetland Values.

Socio-Economic Values	Environmental Quality Values
• Flood Control • Wave Damage Protection • Erosion Control • Groundwater Recharge & Water Supply • Timber & Other Natural Resources • Energy Source (peak) • Livestock Grazing • Fishing & Shellfishing • Hunting & Trapping • Recreation • Aesthetics • Education & Scientific Research	• Water Quality Maintenance • Pollution Filter • Sediment Removal • Oxygen Production • Nutrient Recycling • Chemical & Nutrient Absorption • Aquatic Productivity • Microclimate Regulator • World Climate (ozone layer)

Fish and Wildlife Values
• Fish & Shellfish Habitat • Waterfowl & Other Bird Habitat • Other Wildlife Habitats

Source: American Planning Association, Planning Advisory Service. 1988. *Protection of Non-Tidal Wetlands.* (Report Number 412/413).

Table 6-10.
Vegetation Common to Non-Tidal Wetlands.

Type of Wetland	**Vegetation**
Emergent Wetlands: Freshwater	cattails, wild rice, sedges, rushes, bulrushes, spikerushes, burreeds, rice cutgrass, maidencane, reed, arrowheads, pickerelweed, smartweeds, bluejoint, whitetop, reed cannary grass,manna grass, asters, goldenrod, marsh fern
Pocosins	Pond pine, sweet bay, inkberry, fetterbush, titi, red bay, was myrtle
Others	Buttenbush, alders, willows, dogwoods, red maple sapplings, cottonwood sapplings

Source: American Planning Association, Planning Advisory Service. 1988. *Protection of Non-Tidal Wetlands.* (Report Number 412/413).

There exists three sources for determining the location of wetlands, one of which is the identification of "hydric" soils. Hydric soils are a key indicator of potential wetlands. Lumpkin County

contains four (4) hydric soils which are found throughout the county.

If the wetlands identified in the future land use plan are retained as open space and are protected in accordance with the Environmental Planning Criteria, then no adverse effects are anticipated on the public health, safety and welfare, or the property of others; no known unique or significant flora or fauna, including threatened, rare or endangered species will be impacted; no adverse effects will occur on the flow or quality of water or cause substantial additional soil erosion; no adverse impacts on adjacent natural areas are likely to occur.

Water Supply Watersheds

The City of Dahlonega currently operates a public drinking water intake on Yahoola Creek just north of Wimpy Mill Road. This public water supply watershed, which is generally illustrated on the following map, is characterized as "small" according to DNR criteria. It is a relatively narrow watershed, but extends from the northernmost reaches of Lumpkin County all the way into the northern city limits of Dahlonega.

In addition to Dahlonega's public drinking water intake, the Yahoola Creek Reservoir is proposed to be a future source of public drinking water supply for the county (and possibly the region). This proposed reservoir shares the same watershed as Dahlonega's intake, but includes the Ward Creek Watershed.

Prior to receiving a permit to withdraw water from the reservoir, both Dahlonega and Lumpkin County will need to develop and adopt a water supply watershed protection plan for the Yahoola Creek and Ward Creek watersheds above the resrvoir. The plan will have to meet the minimum protection standards as required by Georgia EPD at the time of permitting.

Map WSW

Floodplains

According to Federal Emergency Management Agency (FEMA) records, Lumpkin County entered the National Flood Insurance Program (NFIP) in 2002. Flood plains located in Lumpkin County are illustrated on the following map and on the Future Land Use Map as parks, recreation and conservation. Currently the local Floodplain Protection Ordinance applies to all FEMA-mapped flood plains and structures located in flood plains. In the near future, flood plains in Lumpkin County will be remapped and updated under a program called Map Modernization.

Insert Floodplain map

Protected Rivers

Maps prepared by the Georgia Department of Natural Resources (DNR) indicate generally that the Chestatee River, at some point south of the City of Dahlonega, to a point where it becomes Lake Lanier, falls under the definition of a "protected river" (annual average flow of 400 cubic feet per second (cfs) or more). While small tributaries enter the Chestatee River between SR 52 and SR 60, it is believed, with relative certainty, that the river at its terminus with Yahoola Creek meets the discharge definition. Therefore, the existing the Chestatee protected river segment lies between Yahoola Creek and Lake Lanier. The segment of protected river is estimated to be approximately 7.5 miles long. Including 100 feet on each side of the riverbank, the protected river corridor is estimated to be approximately 0.28 square miles (182 acres).

According to the original 1994 Comprehensive Plan inventory approximately 51 parcels had land partially within the 100 foot river corridor. Although some of these parcels were developed with single-family dwellings, it did not appear that there were any structures whatsoever within the protected river corridor.

There still exists some that are less than two acres in size lying partially within the protected river corridor. Again, these lots may be developed for single-family dwellings as long as the natural buffer remains, according to the protection criteria. There could quite conceivably be some hardship or practical difficulty for the owners of some of the smallest lots to develop single-family dwellings while maintaining a 100-foot wide natural buffer. It therefore appears likely that such "non-conforming lots" should continue to be exempted from the buffer requirement, that a reduced buffer apply, or that, at a minimum a variance procedure be instituted in local implementing regulations.

It is highly likely that the intended natural buffer along the Chestatee River protected river corridor can be retained. It is reported that in only a few areas was the natural vegetation non-existent in the corridor.

River Corridor Map

Protected Mountains

The "Criteria For Mountain Protection" do not indicate that federal agencies will comply with local mountain protection plans. Furthermore, the national government has traditionally enjoyed "sovereign immunity" from local regulations. Given that Lumpkin County's mountain protection plan would apply to less than a dozen property owners (280 acres or 0.0016% of all unincorporated land in Lumpkin County), the question arises as to whether local implementing regulations are necessary to protect the mountains against development that fails to meet the protection criteria.

With the recent adoption of the character areas based land use code in Lumpkin County, one can conclude that existing development within the standards that are allowed has not had any impact on unique, threatened, rare or endangered species; has not adversely affected surface or ground waters; has had no detrimental effects on visual aesthetics; and has not threatened existing historic, archaeological nor sensitive natural areas.

As a matter of policy, the Lumpkin County comprehensive plan supports the preservation of protected mountain areas. Lumpkin County's land use code discourages any development on these lands except for forestry, agriculture (if feasible at all due to steep slopes and poor access), and single-family dwellings on lots of at least one acre. However, the code recognizes that private lands in Lumpkin County's protected mountain areas are under no significant existing or future threats by development inconsistent with mountain protection criteria. For these reasons, the plan does not recommend that a mountain protection ordinance be adopted into Lumpkin County's Land Use Code. Through local permitting requirements, however, the county will monitor development and expeditiously move to implement mountain protection criteria in the unforeseeable event undesirable/inconsistent development occurs.

Natural, Historic and Scenic Resources Goal ... protect and nurture the natural and historic environment of the County.

Preserve the qualities of the natural environment which give Lumpkin County its character, and preserve those areas which have important recreational, scenic, historic, archaeological, educational, prime agricultural, and aesthetic values; including permanent public open space, green space, and natural areas in all areas of the County.

Encourage development patterns and land use that enables the County to protect and preserve sensitive areas.

Work toward limiting soil erosion from agricultural operations, commercial and residential development sites, and other point and non-point erosion prone activities.

Protect water quality including those sources used for drinking water, recreational activities, and other water bodies, such as non-watershed rivers, streams and creeks by meeting or exceeding minimum state standards for water supply watersheds and groundwater recharge areas.

Protect and preserve viable agricultural lands, wetlands, steep slopes and ridgelines, and other environmentally sensitive areas from incompatible activities and development, protection of mature trees during the development process and other land disturbance activities.

Protect and preserve the integrity of historic and archaeological resources found throughout Lumpkin County, to ensure they are not removed from the County without permission.

Natural Resources Strategies…

Establish an Advisory Committee at the government level to assure the preservation of the environment is coordinated with growth.

1) Develop policies and procedures for the protection of flora and fauna and their habitat.
2) Identify key vistas, views and sites containing unique natural beauty and develop policies to protect them.
3) Identify and acquire land with the intent of developing public parks or preserves.
4) Ensure the protection of strategic areas through donations to organizations such as the Nature Conservancy with the objective of creating natural refuges, reserves or nature centers.

Develop a Future Land Use Map, concentrating development in specific areas of the County and limit development in environmentally sensitive areas.

Enact ordinances for tree protection, signage, landscaping, trail connections, buffer areas between development and sensitive land uses, a greenway system plan, and open space requirements.

Establish environmental education programs for youth at the school level, the general public and development interests.

Establish land use regulations and development standards related to development and storm water management, waste disposal within watersheds, aquifers, groundwater recharge areas, and open space zones to ensure compliance with DNR rules.

Work with applicable organizations to monitor activities, which could affect the quality of the water supply through enforcement activities and other mechanisms.

Protect, preserve and regulate flood prone and wetland areas from unsuitable development or development that is detrimental to these areas.

Assist farmers in implementing Best Management Practices.

Agricultural Protection Strategies

Effect protective mechanisms and design performance standards for agricultural lands, such as voluntary covenants, Purchase of Development Rights, Transfer of Development Rights, Agricultural or large lot zoning, and utility extension policies that preserve agricultural lands.

Minimize land subdivision and development within fertile riverine bottomlands and other areas containing prime agricultural soils.

Develop guidelines to minimize incompatible uses between residential and agricultural development.